APPENDIX A

Opinion of District Court

IN THE

UNITED STATES DISTRICT COURT

FOR THE WESTERN DISTRICT OF PENNSYLVANIA

DuBROOK, INC., a Corporation,

Plaintiff,

vs.

THE W. B. GIBSON COMPANY, a Corporation,

Defendant.

CIVIL ACTION NO. 79-1365

PRELIMINARY STATEMENT

W. B. Gibson Company entered into a contract with Western Butler County Authority for construction of a Water Pollution Control Plant at Zelienople, Butler County, Pennsylvania. DuBrook, Incorporated, received a Purchase Order from W. B. Gibson Company for ready mix concrete on the job. The Purchase Order, styled Plaintiff's Exhibit 4, was dated April 7, 1977, but was made contingent upon the W. B. Gibson Company's receiving the contract award. Such award was made May 5, 1977, and DuBrook was notified of the event by Change Order of W. B. Gibson Company, dated May 27, 1977.

The plant facilities of DuBrook were inspected and approved by a representative of Gibson. A mix design prepared by West Penn Testing Laboratories was obtained by Gibson and furnished to DuBrook in connection with the terms under the Purchase Order. DuBrook followed the mix design in every instance, except when directed by the resident engineer or Gibson to add more AEA, (air entraining agent) to add more water, to add plastiment, or to increase the cement content. DuBrook made no variations on its own initiative.

DuBrook entered into the performance of the Order and commenced supplying concrete to the job site on June 21, 1977. On that date, one pour was removed at the direction of the resident engineer because the slump was too high. Every subsequent load of concrete delivered to the job site and poured was accepted and is still in place.

Deliveries by DuBrook continued, with payment by Gibson being made on a monthly basis. When payment was not made for deliveries of May 1978, DuBrook made no further deliveries. At that time the amount due DuBrook was $30,156.73. Thereafter, Gibson made a payment of $10,000.00 on account on August 23, 1978. No further payments were made.

In addition, DuBrook claimed damages for loss sustained as a result of another contractor's supplying the concrete which DuBrook would have supplied had it been paid monthly as agreed. The amount of concrete delivered by the other contractor was 1,146 yards, from which DuBrook would have realized $6.35 per yard after deduction of fuel costs and drivers' wages from the

agreed price per yard. The damage figure for this element is $7,277.10. The total amount claimed in this suit is $27,433.83.

Gibson filed its Counterclaim, alleging deficiencies in the product delivered by DuBrook and claiming damages for expenses and down-time in connection with and resulting from the curing of such alleged deficiencies. A non-jury trial before the Hon. Daniel J. Snyder, Judge, commenced April 14, 1980, and terminated on April 21, 1980. Judge Snyder died before his decision was recorded, and the case was assigned to the Hon. Paul A. Simmons. After conference with the attorneys of record and Judge Simmons, it was agreed that the parties could submit their Requests for Findings of Fact, Conclusions of Law and Briefs, and that the matter would be argued at length before Judge Simmons.

After considering arguments of counsel, the trial record, the pleading and the filed briefs, the Court makes the following findings of fact, conclusions of law and order.

FINDINGS OF FACT

1. Section IV of the Specifications for the Western Butler County Authority for construction of a Water Pollution Control Plant at Zelienople, Butler County, Pennsylvania, to which reference is made in the W. B. Gibson Company Purchase Order to DuBrook, Incorporated, deals with excavation, and is not applicable to the deliveries by DuBrook under said Purchase Order.

2. Section III of the Specifications for the Western Butler County Authority for construction of a Water

Pollution Control Plant at Zelienople, Butler County, Pennsylvania, to which reference is made is the W. B. Gibson Company Purchase Order to DuBrook, Incorporated, deals with "materials" and of said Section only subsections 1 through 4, 9 and 10 are applicable to the deliveries by DuBrook under said Purchase Order.

a) Subsection 1, "Portland Cement" was complied with by DuBrook as to Type II as evidenced, inter alia, by:

1) Defendant's Exhibit 4—Mix Design of West Penn Testing Laboratories, Inc. (WPTL) dated June 2, 1977, and approved by Defendant.

2) Defendant's Exhibit 20—Report of Erlin, Himes Associates, dated March 8, 1978.

3) Defendant's Exhibit 18—Letter of Duncan, Langnese and Associates, Inc., dated March 17, 1978, at Page 2, wherein it was stated that, "The design mix specified in the contract documents was utilized."

4) No complaint was made by or for the Defendant that the Portland Cement was below specifications.

And, Type III was never called for.

b) Subsections 2, "Fine Aggregate" and 3, "Coarse Aggregate" were complied with by DuBrook, as evidenced, inter alia, by:

1) Defendant's Exhibit 4, 20 and 18 as above.

2) Defendant's Exhibit 19, report of WPTL, dated May 19, 1978, that fine aggregate *did* comply with specification requirements.

3) The WPTL report of May 26, 1978, confirms that coarse and fine aggregates met specifications.

4) No complaint was made by or for Defendant that the aggregates were below specifications.

c) Subsection 4, "Water for Concrete", was complied with as evidenced, inter alia, by Defendant's Exhibits 4, 20 and 18 above, and further by the fact that no complaint was made by or for Defendant that the water was below specifications.

d) Subsection 9, "Calcium Chloride", was complied with in that it was used once, on October 25, 1977, at the request of Defendant's Project Superintendent, and no complaint was made by or for Defendant as to the same.

e) Subsection 10, "Grout", was complied with in that the specified ingredients were used in the required proportions.

3. All materials were stored and handled at DuBrook's Evans City Plant in such a manner as to insure retention of their initial conformity to specifications, as evidenced, inter alia, by:

a) Defendant's Exhibit 25—"Report of WPTL Batch Plant and Pre-concreting Inspection", dated January 11, 1978, stating that the plant could produce quality concrete.

b) Defendant's Exhibit 23—WPTL "Concrete Batch Plant Inspection", stating that the plant scales were inspected and certified and that the plant met the criteria in NRMCA (National Ready Mix Concrete Association) guidelines.

4. The batching procedures used by DuBrook were those recommended by the NRMCA, and were effective in utilizing the components as specified and the batching plant facilities to produce a concrete to meet specifications, and these procedures included the following:

a) Aggregate was taken from a paved, ground storage bin by front end loader, placed in a confining hopper for transfer by conveyor belt to overhead storage bins, dropped into a weigh batching hopper, weighed in proper amounts and then conveyed by belt into the back of a truck.

b) Cement in dry bulk was moved by enclosed screw conveyor to weighing hopper with automatic shutoff when prescribed amount was reached, and then was dropped directly into the truck.

c) Water was volumetically batched with an automatic shutoff device, with about 75-80% of the specified water being added at the plant.

d) Admixtures were measured in visual volumetic devices. The air entraining agent (AEA) was added directly to the water supply. The Plastiment was added directly to the fine aggregate after weighing.

5. The Mix Design was formulated by WPTL and approved by Defendant without DuBrook's being consulted, and DuBrook followed the Mix Design explicitly, except when the same was modified by instructions of employees of the Project Engineer or by employees of the Defendant, in which event the modifications were followed explicitly, as follows:

a) From time to time the amount of air entraining agent (AEA) was changed.

b) Defendant's Chief Engineer requested an increase of the cement from 6.5 sacks to 7 sacks.

c) From time to time, DuBrook's drivers were instructed to add bags of cement of the Defendant to loads of concrete after delivery to the job site.

d) From time to time DuBrook's drivers were instructed to add air entraining agent (AEA) to loads of concrete.

e) The drivers added sufficient water on the job site to bring the slump to 2-1/2" to 3", and thereafter any water added by the drivers was at the express direction of project engineer or the Defendant's employees.

f) Plastiment was added at the batching plant at the direction of Defendant.

g) To the extent that there was any conflict between the terms of the mix design formulated by the West Penn Testing Laboratories, Inc., and the written specifications, this Court finds as a fact that the parties intended that the terms of the mix design were to control the mixing of the concrete.

6. The last payment by Gibson on account of the balance claimed to be due was in the amount of $10,000.00, and was made on August 23, 1978, just short of 3 months after DuBrook had ceased making deliveries to the job.

7. The unpaid balance due from Gibson to DuBrook for deliveries made is $20,156.73, and interest at 6% per annum is due thereon from May 31, 1978.

8. DuBrook ceased making deliveries by reason of the improper withholding by Gibson of the balance due as of May 31, 1978.

9. Deliveries which DuBrook would have made after May 31, 1978, had not Gibson breached its contract, amounted to 1146 cubic yards, from which DuBrook would have realized $7,277.10, for profit and overhead.

10. DuBrook is entitled to damages as a result of the breach of contract and the loss of profit and overhead, in the amount of $7,277.10, with interest from December 6, 1978.

11. DuBrook had no control over the mix design which was intended to achieve 4000 psi concrete, and, if the mix design would have been effective to produce 4000 psi concrete, variations in the mix design ordered or accomplished by employees of the Project Engineer or employees of the defendant, resulted in concrete test cylinders of strength less than 4000 psi, which variations are described as follows:

a) DuBrook drivers were instructed to add water into the load on the job site after the slump had been brought to 2-1/2" to 3" by the drivers.

b) Additional water was added to the concrete as it came down the chute from the truck, not by DuBrook drivers.

c) Additional water was added to the concrete as it moved on Defendant's conveyor, not by DuBrook drivers.

d) Additional water was added to the concrete in the concrete pump hopper, not by DuBrook drivers.

e) On at least one occasion, Joe Holland, an employee of Defendant, released water from the truck tank directly into the load before it was discharged.

f) Air entraining agent (AEA) was added to loads at the job site on instructions of Defendant's employees or the Project Engineer.

g) Air entraining agent (AEA) was increased from time to time upon orders of other than DuBrook personnel.

h) Plastiment was added at the direction of Defendant's General Superintendent without giving proper consideration to the need for more careful air testing when using AEA and plastiment concurrently.

12. As a result of the various items set forth in 11 above, either separately or in combination, tests of the concrete poured indicated a strength of less than 4000 psi, which can be explained as follows:

a) Excessive water added after the 2-1/2" slump had been attained by DuBrook's drivers increased the slump, changing the water-cement ratio and causing a higher air percentage in the concrete.

b) As a rule of thumb, a minimum decrease of 5 or 6 per cent in strength can be anticipated for each percentage point of air greater than that of the actual trial mixes.

c) Plastiment acts as a retarder to cement hydration and prolongs strength development, particularly when Type II cements are used, so that 28-day strength tests would not accurately represent the ultimate strength of the concrete.

13. Test procedures employed by Defendant or by others engaged by Defendant to make tests did not follow ASTM procedures, as required by the job specifications, in that:

a) A Chase air indicator employed on the job site does not meet ASTM testing standards of accuracy.

b) Slump tests were not taken every time a test cylinder was being cast.

c) Test cylinders were not properly filled and todded.

d) Proper air tests were not taken each time a test cylinder was being cast.

e) Temperature of the concrete in the test cylinder was not recorded.

f) Test cylinders were not protected on the job site, in that they were not moved immediately to the proper curing box to remain for the first day.

g) Test cylinders were not delivered to the testing laboratory within 20 hours, plus or minus 4 hours, after they were cast.

h) Weights of test cylinders were not recorded in test reports.

i) The required number of test cylinders were not tested on all occasions.

j) Time of concrete in trucks exceeded specification limits of 45 minutes.

14. As a result of the items in 13 above, the cylinder tests upon which Defendant relies are inaccurate and fail to prove that the concrete delivered by DuBrook did not meet contract specifications.

15. DuBrook volunteered suggestions, demonstrations and recommendations to the Project Engineer and General Superintendent of Defendant for the elimination of the reported low strength of the test cylinders, as follows:

a) A re-design of the mix was suggested the first day of the job, to add a water reducing agent to facilitate placement of the concrete without adding extra water.

b) Acquisition of an approved pressure meter to measure the air content of the concrete.

c) Acquisition of a water curing tank to properly cure the test cylinders.

d) Acquisition of a scoop to place concrete in the test cylinders instead of using a shovel.

e) DuBrook test cylinders made for demonstration purposes showed decreasing strength as slump was increased.

f) Institution of a quality control program under which "Testing" in accordance with Section II of the Specifications, which were the responsibility of the contractor, would be conducted under ACI Standard 214-65.

16. Notwithstanding the recommendation in 15(a) above, DuBrook's successor supplier on the job had a concrete mix design providing for a reducing agent, Possolith - 200 N. See WPTL Report of June 7, 1978 to Defendant.

17. The mix design as supplied to DuBrook was itself out of specification in that the air of 6.3 exceeded the five plus or minus 1% allowable, and the 3-1/2" slump exceeded the 1" to 3" slump specified for vibrated concrete.

18. At all times during the purported delay in construction to which Defendant attributes most of its damage, DuBrook was ready, willing and able to provide concrete upon sufficient notice; no notice was given and no orders were placed with DuBrook by Defendant.

19. After DuBrook had ceased supplying concrete to the Water Pollution Control Plant site, at which time the balance due DuBrook was $30,156.73, Gibson, with full knowledge of any deficiencies in the concrete for which DuBrook claimed to be paid, asserted no offset or counterclaim for damages, but rather, on August 23, 1978, paid $10,000 to DuBrook on account.

20. Although Defendant, on January 24, 1979, threatened a counter suit if DuBrook filed a suit against it for the balance of $20,156.73, due and owing as of May 31, 1978, the Defendant never asserted a claim against DuBrook by reason of any non-performance of the contract by DuBrook, until after the within action was instituted.

21. Control over the concrete of DuBrook supplied to the project was in the Project Engineer and the Defendant—they set the mix design, they approved the

components, they approved the weighing and measuring procedures of DuBrook, they approved the batching facilities of DuBrook, they alone directed variations in the mix design, they supervised the final mixing at the job site, they had the right to accept or reject any given load (which right to reject was exercised by them), they controlled the unloading, they controlled the method of placing the concrete, they controlled sampling and testing at the job site, and they accepted all of the concrete now in place.

22. After the first pour on the first day on the job, June 21, 1977, no concrete poured on the job from DuBrook truck was ever removed after pouring. The concrete was accepted by the owner, and the Defendant was paid by the owner for the concrete.

23. Concrete delivered to the job site by DuBrook and used in the project met all specifications to the extent that DuBrook was allowed by the Defendant to exercise control over the concrete to the time that it was poured. DuBrook mixed exactly what it was told to mix, and in the manner in which it was told to mix it.

24. It is not the ultimate strength of the concrete which is the criterion in this case; rather it is the extent to which Defendant is responsible for the end results, by reason for the influence and control which it exercised over the concrete.

25. The responsibility for any deficiencies is the concrete on this project lies with the Defendant, because it continuously retained enough control to be responsible for the end product.

26. W. B. Gibson Company shut down the Western Butler County Authority project for a period of 65 days over the Winter of 1977-78, because of the severity of the weather, consisting of long periods of cold weather and large accumulations of snow, and no work critical to the overall purposes of the job was accomplished.

27. Sec. II-2, of the Specifications required the contractor to perform and pay for all Tests of the Job Concrete.

28. In connection with delays in progress of the work at the job site, the first time that Gibson attributed such delays to concrete problems was August 20, 1979, five days after the Complaint in Assumpsit in this matter was filed by DuBrook.

29. DuBrook's damages for concrete sold to W. B. Gibson is $20,156.73.

30. DuBrook's damages for the loss of its right to sell the balance of the concrete to W. B. Gibson per the contract is $7,277.10.

31. The testimony of the witnesses of the Defendant against the claim of the Plaintiff and in support of the counterclaim of Defendant is unbelievable and not credible. (For the following reasons:)

(a) Defendant never advised the Plaintiff of any inadequacies of the concrete in question of any kind or nature whatsoever until five days after Plaintiff filed this law suit and over fifteen months after the job was completed.

(b) All concrete sold by the Plaintiff was retained by the Defendant and is still in place.

(c) There was no unnecessary or costly delay in the construction occasioned by alleged bad concrete delivered by the Plaintiff to Defendant's job site.

Judge Snyder said it well when Bruce E. Rhodes, chief engineer for the W. B. Gibson Company had apparently concluded his testimony on damages,

> "THE COURT: How do you say that he has shown anything with respect to the period of delay? Any basis at all for the conclusion that there was five months delay? He starts out by saying, "We could have claimed more. We thought in fairness we would only claim five." It's only a guess; a guesstimate of the worse kind. There's no proof of one single minute of delay, not one single minute, except his willingness to state an opinion. On what basis?" (R. 339).

(d) Further, the President of Gibson never asserted a counterclaim and never responded to requests of DuBrook for an itemization of any amount claimed by way of adjustment until after DuBrook had filed its Complaint.

(e) Over two months after Plaintiff had ceased delivering the concrete that the Defendant now alleges to have been defective, the Defendant paid the Plaintiff $10,000.00 on account.

(f) The Defendant Contractor in fact tested or should have tested each batch of concrete as it was delivered. It is unbelievable that the Defendant would knowingly accept unacceptable or defectively mixed concrete, and partially pay for the same some several months after delivery. The only rational conclusion is that the Defendant's testimony and claim in this case is totally unbelievable.

CONCLUSIONS OF LAW

1. Plaintiff DuBrook supplied a product in accordance with all relevant agreements of the parties and the mix design furnished by Gibson, as modified by Gibson and the project engineer. The price per unit was stipulated, the quantity supplied is not in dispute, the amount paid on account for the quantity delivered is agreed upon, and consequently, DuBrook is entitled to $20,156.73, as the balance due by reason of concrete purchased by Gibson.

2. Defendant Gibson materially breached its agreements with Plaintiff and more particularly its Purchase Order Contract when it neglected to pay for concrete delivered in the month of May, 1978; DuBrook was justified in not making further deliveries under the terms of the Purchase Order by reason of the failure of the Defendant to pay for past deliveries promptly; a subsequent supplier delivered 1,146 cubic yards of concrete which Plaintiff DuBrook should have delivered but for Defendant's breach of contract and on which DuBrook would have realized the sum of $6.35 per cubic yard for profit and overhead; DuBrook is entitled to $7,277.10 damages.

3. DuBrook, having supplied concrete in accordance with the Purchase Order design mix, specifications and instructions of the project engineer and Gibson, is not responsible for any defects in the result.

4. Gibson and the project engineer having asserted such close control over the source, the formulation and the production of the concrete to be used in the Water Pollution Control Plant, responsibility for any delays in progress caused by a defect in the material cannot be assigned to DuBrook, Incorporated.

5. Gibson offered no competent proof of any delay in the project which could be attributed to any breach of contract, failure or omission on the part of DuBrook.

6. Defendant Gibson failed to prove its claim against DuBrook, Incorporated for damages by reason of any breach of contract, failure or omission of DuBrook in connection with the supplying of concrete to the Western Butler County Authority Water Pollution Control Plant project. Defendant Gibson's testimony in defense of Plaintiff's claim and in support of Defendant's Counterclaim, is not believable and is totally incredible.

7. A verdict is entered in favor of the Plaintiff and against the Defendant for the sum of $27,433.83, with interest at six (6%) per cent.

8. As to the counterclaim of the Defendant, the verdict is entered in favor of the Plaintiff.

VERDICT AND JUDGMENT

AND NOW, this 30th day of MARCH, 1981, as to the Plaintiff's claim, a verdict is rendered in favor of the Plaintiff and against the Defendant in the amount of $27,433.83, with interest at six (6%) per cent; as to the Defendant's Counterclaim, a verdict is rendered in favor of the Plaintiff and against the Defendant.

IT IS THE FURTHER ORDER OF THIS COURT, that judgment is now entered in favor of Plaintiff DuBrook, Inc. and against the Defendant, The W. B. Gibson Company, a corporation, in the amount of $27,433.83, with interest at six (6%) per cent, calculated from May 31, 1978. Costs shall be paid by the Defendant, The W. B. Gibson Company.

PAUL A. SIMMONS
United States District Judge

APPENDIX B

United States Court of Appeals
Affirmance of District Court's Opinion

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 81-1779

DuBROOK, INC., a corporation,

v.

THE W.B. GIBSON COMPANY, a corporation,
Appellant.

(Civil No. 79-1365—W.D.Pa.—Pittsburgh)

Submitted Under Third Circuit Rule 12(6)
November 12, 1981

BEFORE: SEITZ, *Chief Judge*, GARTH, *Circuit Judge*, and CAHN, *District Judge.**

JUDGMENT ORDER

After consideration of the contentions raised by appellant, it is

ADJUDGED AND ORDERED that the judgment of the district court be and is hereby affirmed.

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* Edward N. Cahn, Judge of the United States District Court for the Eastern District of Pennsylvania, sitting by designation.

Appendix B. United States Court of Appeals Affirmance of District Court's Opinion.

Costs taxed against appellant.

By the Court,

SEITZ
Chief Judge

ATTEST:

SALLY MRVOS
Clerk

DATED: NOV 30 1981

Certified as a true copy and issued in lieu of a formal mandate on December 31, 1981.

Test: M. ELIZABETH FERGUSON
Chief Deputy Clerk, United States Court of Appeals for the Third Circuit

APPENDIX C

Denial of Petition for Rehearing

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 81-1779

DuBROOK, INC., a corporation,

v.

THE W. B. GIBSON COMPANY, a corporation,
Appellant.

(Civil No. 79-1365—W.D.Pa.—Pittsburgh)

SUR PETITION FOR REHEARING

Present: SEITZ, *Chief Judge,* ALSIDERT, ADAMS, GIBBONS, HUNTER, WEIS, GARTH, HIGGINBOTHAM, SLOVITER, *Circuit Judges,* and CAHN, *District Judge.**

The petition for rehearing filed by Appellant in the above entitled case having been submitted to the judges who participated in the decision of this court and to all the other available circuit judges of the circuit in regular active service, and no judge who concurred in the deci-

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* Edward N. Cahn, Judge of the United States District Court for the Eastern District of Pennsylvania, sitting by designation.

sion having asked for rehearing, and a majority of the circuit judges of the circuit in regular active service not having voted for rehearing by the court in banc, the petition for rehearing is denied.

By the Court,

SEITZ
Chief Judge

Dated: December 23, 1981

APPENDIX D

Granting Motion to Stay Issuance of Mandate

UNITED STATES COURT OF APPEALS

FOR THE THIRD CIRCUIT

No. 81-1779

DuBROOK, INC., a corporation,

vs.

THE W.B. GIBSON COMPANY, a corporation,
Appellant.

(D.C. Civil No. 79-1365)

Present: SEITZ, *Chief Judge;* GARTH, *Circuit Judge;* and CAHN, *District Judge.**

January 8, 1982

1—Motion by appellant To Stay Issuance Of Mandate Pending Application To The Supreme Court For Writ Of Certiorari, which the Court may wish to treat as a motion to recall and stay the mandate;

2—For your information, the certified judgment in lieu of formal mandate issued on December 31, 1981,

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* Sitting by designation.

in the above-entitled case. Any answer which would be due by January 14, 1982, will be forwarded to you upon receipt of same.

Respectfully,

BETTY J. ROBINSON
Deputy Clerk

BJR:mmd
enc.

The foregoing Motion is granted—(illegible)

By the Court,

SEITZ
Chief Judge

Dated: January 21, 1982

APPENDIX E

Purchase Order of Gibson Co. to DuBrook, Inc.

EXHIBIT "A" [redacted] PURCHASE ORDER

THE W. B. GIBSON COMPANY № 24798

Box 420 / 200 Chestnut Northeast / Warren, Ohio 44483 / 216-394-8971

TO Du Brook Incorporated
P. O. Box 68
Butler, Pennsylvania 16001

DATE April 7, 1977

JOB SUPERINTENDENT

PHONE

ATTENTION Barney Ogorchock 412-283-3111

#24798

PLEASE FURNISH THE FOLLOWING AND SEND INVOICE IN DUPLICATE WITH BILL OF LADING TO THE PURCHASING DEPARTMENT ON DATE OF SHIPMENT.

Furnish and deliver Ready Mix Concrete in accordance with Sections III and IV of the specifications.

Work to comply with drawings 1 thru 67, specifications, and addenda 1 thru 5 all entitled "Western Butler Water Pollution Control Plant - Contract One-A General Construction Project No. C-420895-01," prepared by Duncan, Lagnese and Associates Inc.

1.	Class A concrete with Type II cement 4000 psi 6-1/2 sack minimum		$28.75/C. Y. Net
2.	Class B concrete with Type II cement 3000 psi 5-1/2 sack minimum		27.00/C. Y. Net
3.	Any concrete required with Type I cement will be ~~$1.00~~ .75/C. Y. less than price given above		
4.	Plastiment when ordered	ADD	.75/C. Y.
5.	Calcium when ordered	ADD	.60/C. Y.

(continued)

OUR JOB NO. Western Butler Water Pollution Control Plant
SHIP VIA
TO Market St., Zelienople, PA
TERMS Net 10 days after 1st or 15th of month or +.50/C. Y. after the 10 day period
F. O. B
DELIVERY As required

PLEASE SIGN PINK COPY AND RETURN

THE W. B. GIBSON COMPANY

B. E. Rhodes Purchasing Agent

Accepted By:

Appendix E. Purchase Order of Gibson Co. to DuBrook, Inc.

Du Brook Incorporated
Page 2
Purchase Order #24798

Clarifications:

a. Prices 1 and 2 are firm thru April 1, 1978. After April 1, 1978, items 1 and 2 will be increased $1.00/C. Y.

b. Prices 3, 4 and 5 are firm for duration of project.

c. Submit materials immediately to West Penn Laboratory for testing. Tests paid for by The W. B. Gibson Company.

d. There will be no minimum load charges, or delay time.

e. All heating is included in above prices.

f. W. B. Gibson Company to furnish access to and from site.

g. There will be no Saturday or Sunday delivery required.

This purchase order is contingent on The W. B. Gibson Company receiving a contract award from the owner. If for any reason we should not receive a contract award, this purchase order becomes void with no cancellation charges and no obligation on either parties' behalf. Do not begin fabrication or delivery until clause is removed by change order. Supplier agrees to proceed with all shop drawings immediately. Submit 9 copies of shop drawings for approval.

EXHIBIT "A" - concluded

THE W. B. GIBSON COMPANY

№ 24798

Box 430 / 300 Chestnut Northeast / Warren, Ohio 44483 / 216-394-2571

TO [illegible] DATE April 7, 1977
P. O. Box 69
Butler, Pennsylvania 16001 THE W. B. GIBSON CO.

JOB SUPERINTENDENT

PHONE

ATTENTION

PLEASE FURNISH THE FOLLOWING AND SEND INVOICE IN DUPLICATE WITH BILL OF LADING TO THE PURCHASING DEPARTMENT ON DATE OF SHIPMENT.

Furnish and deliver Ready Mix Concrete in accordance with Sections III and IV of the specifications.

Work to comply with drawings 1 thru 67, specifications, and addenda 1 thru 5 all entitled "Western Butler Water Pollution Control Plant - Contract One-A General Construction Project No. C-420805-01," prepared by Duncan, Lagnese and Associates Inc.

1. Class A concrete with Type II cement 4000 psi 6-1/2 sack minimum		$28.75/C. Y. Net
2. Class B concrete with Type II cement 3000 psi 5-1/2 sack minimum		27.00/C. Y. Net
3. Any concrete required with Type I cement will be ~~$1.00~~ .98/C. Y. less than price given above		
4. Plastiment when ordered	ADD	.75/C. Y.
5. Calcium when ordered	ADD	.60/C. Y.

(continued)

OUR JOB NO. Western Butler Water Pollution Control Plant
SHIP VIA
TO Market St., Zelienople, PA
TERMS Net 10 days after 1st or 15th of month
F. O. B or +.50/C. Y. after the 10 day period
DELIVERY As required

PLEASE SIGN PINK COPY AND RETURN
THE W. B. GIBSON COMPANY

Purchasing Agent

Accepted By [signature]

APPENDIX G

Concrete Mix Design Prepared by West Penn Testing Laboratory

West Penn Testing Laboratories, Inc.

An Independent Inspection Bureau and Testing Laboratory

482 West Eighth Avenue West Homestead, Pennsylvania 15120

P.O. Box 324 ☆ Area Code 412 461-3717

File No. 21027
May 4, 1977
Page 1

Report of

CONCRETE MIX DESIGNS

PROJECT:	Western Butler Water Pollution Control Plant
OWNER:	Western Butler County Authority
ENGINEER:	Duncan, Lagnese & Associates, Inc.
CONTRACTOR:	The W. B. Gibson Company
MATERIALS:	Cement - Bessemer - Type II
	Fine Agg. - Sand - Cooper Sand & Gravel
	Coarse Agg. - #2 Limeston. Sechan Limestone, Inc.
	Admixture - Sika AER - Sika Chemical Co.
SUPPLIER:	DuBrook, Inc.
DATE OF DESIGNS:	April 25, 1977

TRIAL MIX #1 - 4000# Psi at 28 Days - Air Entrained

	Weight Per Cubic Yard
Cement	611# (6.5 sack)
Sand	*1270#
Limestone - #2	*1800#
Water	292# (35 gals.)
Sika AER	1 oz./100# cement
Slump	3-1/2"
Air Content	6.3%

Compressive Strength Results: (Average of 3 Cylinders)

7 Days	28 Days (Due 5-23-77)
2920# Psi	5250# Psi

*Saturated Surface Dry

The W. B. Gibson Company
These documents have been reviewed and approved by the General Contractor with the following notations:

Date May 27, 1977

Signed

A28

APPENDIX H

Engineer's Notice to Contractor to Cease Pouring Except at Contractor's Risk

Duncan, Lagnese and Associates, Inc.
3182 Babcock Boulevard
PITTSBURGH, PENNSYLVANIA 15237

(412) 931-8400 (412) 364-5403

FILE

LETTER OF TRANSMITTAL

DATE SEPT 20, 1977 JOB NO

ATTENTION MR SWEET

RE CORE SAMPLING

WESTERN BUTLER

CONTRACT ONE-A

TO W. E. GIBSON CO.

GENTLEMEN:

APPENDIX H - Engineer's Notice to Contractor to cease pouring except at Contractor's risk.

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
TRANSCRIPTION OF "REMARKS" BELOW: -- 'Concrete core specimens will be required from areation Tank NO.2 Slab & Chlerine Contact Tank Slab as detailed on Page II-2 of the contract specifications. Specimens will be taken by W.P.T.L. at a time to be determined by the contractor. Any further construction on these two slabs will be at the contractor's risk."			

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19_____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS CONCRETE CORE SPECIMENS WILL BE REQUIRED FROM AERATION TANK NO. 2 SLAB AND CHLORINE CONTACT TANK SLAB AS DETAILED ON PAGE II-2 OF THE CONTRACT SPECIFICATIONS. SPECIMENS WILL BE TAKEN BY W.P.T.L. AT A TIME TO BE DETERMINED BY THE CONTRACTOR. ANY FURTHER CONSTRUCTION ON THESE TWO SLABS WILL BE AT THE CONTRACTOR'S RISK.

COPY TO ENGINEER

SIGNED: [signature]

If enclosures are not as noted, kindly notify us at once.

Best Copy Available

APPENDIX I

Notice of DuBrook of Deficiency of Concrete

[illegible] VA. 22405

western union **Mailgram**

Dep Ex 16

2-137468E273002 09/30/77 ICS IPMBNGZ CSP CLVB
: MGM TDBN WARREN OH 09-30 0118P EST

W B GIBSON
PO BOX 430
WARREN OH 44482

THIS MAILGRAM IS A CONFIRMATION COPY OF THE FOLLOWING MESSAGE:

TDBN WARREN OH 87 09-30 0118P EST
FON 4122833111
DUBROOK INC COPY MESSAGE
PO BOX 68
BUTLER PA 16001
REGARDS TO WESTERN BUTLER WASTEWATER TREATMENT PLAN ZELIENOPLE
PENNSYLVANIA
BE ADVISED OF THE FOLLOWING
1. 28 DAY CONCRETE CYLINDER TEST FOR CONCRET SLAB AT AERATION TANK NUMBER TWO AND CHLORINE TANK FAILED TO YIELD SPECIFIED STRENGTH OF 4,000 PSI
2. CORE CYLINDERS TAKEN ON 9 29 77 FAILED TO YIELD SPECIFIED STRENGTH OF 4,000 PSI

YOU ARE HEREBY NOTIFIED THAT IF WE ARE REQUIRED TO REPLACE ANY OF THIS CONCRETE THAT DUBROOK WILL BE HELD LIABLE FOR ALL COSTS INVOLVED IN THIS REPLACEMENT PLUS 15 PERCENT
B E RHODES CHIEF ENGINEER W B GIBSON CO WARREN OHIO

1311A EST

MGMCOMP MGM

APPENDIX J

Report of Erlin Hime Associates

ERLIN, HIME ASSOCIATES

MATERIALS AND CONCRETE CONSULTANTS

811 SKOKIE BOULEVARD
NORTHBROOK, ILLINOIS 60062

(312) 272-7720

3/8/78

PETROGRAPHIC STUDIES OF CONCRETE

FROM THE

WESTERN BUTLER WATER POLLUTION CONTROL PLANT

FOR

WEST PENN TESTING LABORATORIES, INC.

• • •

SUMMARY AND DISCUSSION

The cores were air-entrained and made with good quality and well-graded crushed limestone coarse aggregate and natural calcareous-siliceous sand fine aggregate. Cement contents are estimated to be at about the design level of 6-1/2 bags per cubic yard of concrete, and water-cement ratios were moderate to moderately high and comparable to what would be anticipated for the design water content. There was not present solid admixture components such as slag or flyash. The compositional characteristics of the residual cement were typical of Type II portland cement. Residual cement was abundant.

Air contents were from 7.4 to 9.5 percent, and at the higher air contents, the entrained air voids frequently were clustered in the mortar and in coarse aggregate sockets.

Among factors that will serve to cause reduced strengths are: (1) the somewhat high air contents; and (2) concrete placement during low temperatures so that cement hydration is slowed, and combinations of water-reducers (Plastiment) and low concrete temperatures. At low concrete temperatures, water-reducers act as retarders to cement hydration, and prolong strength development, particularly when Type II cements are used.

Defendant's Exhibit 20
Stipulated
Atty. for Plf.
Atty. for Def.

Best Copy Available

The significant amount of residual cement present in the cores will provide increased strength gain. The level of gain will be dependent upon the ability of the continued hydration to overcome the effects of the high air contents. There can be anticipated strength gains of at least about 500 to 700 psi providing the concrete is continuously moist cured, and curing temperatures are not low.

The overall quality of the concretes should provide for good durability with respect to resistance to cyclic freezing, chemical attack, and to wear.

* * *

INTRODUCTION

Reported herein are the results of petrographic studies of concrete cores submitted by N. D. Campbell of West Penn Testing Laboratories, Inc. The cores were reported to be from the Western Butler Water Pollution Control Plant where lower-than-designed compressive strength was encountered. Requested by Mr. Campbell were studies for evaluating the cores so that factors contributing to the low strength could be determined. In addition, interest was expressed in determining the potential for future strength gain.

Accordingly, the cores were examined using methods of petrographic microscopy, and the characteristics of their air-void systems were determined using the linear traverse technique and the procedures in ASTM C457, "Microscopical Determination of Air-Void Content and Parameters of the Air-Void System in Hardened Concrete."

STUDIES

Specimens - Received for the studies were six cores having diameters of 4 inches, and nominal lengths of 6 inches. The ends of the cores were sawed surfaces.

The cores were identified as Nos. 7, 8, 10, 12, 13, and 14. Cores 7, 8, and 10 were from the #2 Aeration Tank Base, and Cores 12, 13, and 14 were from the Chlorine Tank Base. The compressive strengths of the cores were from 2650 psi to 3690 psi.

The reported concrete mix was as follows:

Appendix J. Report of Erlin Hime Associates.

Type II Cement	611 pounds
Cooper Sand	1270 pounds
3/4-inch Sechan Limestone	1800 pounds
Water	292 pounds
Sika AER	6.1 ounces
Plastiment	19-1/2 ounces
Compressive Strength	4000 psi @ 28 da.

Each core was cut so that longitudinal cross sections were available for the air-void studies.

Petrographic Studies - Coarse aggregate of the cores was a crushed medium to dark grey, fine-grained, dense, generally equi-axial, and occasionally fossiliferous limestone or dolomite having a maximum nominal size of 3/4 inch. The fine aggregate was a natural calcareous-siliceous sand constituted of a variety of materials that included limestone, dolomite, quartz, feldspar, granite, chert, and mafic minerals.

The aggregates were well-graded and uniformly dispersed, and had been physically and chemically sound during their service in the concrete. The aggregates were of good quality.

Paste of the cores was medium brown-grey, dense, firm, and contained abundant residual cement and moderately-sized hydration products of the cement. The compositional characteristics of the residual cement are characteristic of Type II portland cement (as reported to have been used). The compositional and textural characteristics of the pastes are indicative of cement contents at about the design level of 6-1/2 bags per cubic yard of concrete, and a moderate to moderately high water-cement ratio.

The concretes were well-consolidated as evidenced by lack of honeycombing and particularly coarse voids. There was no evidence of segregation.

Air-Void Studies - A magnification of 75X was used.

Air contents of the cores were from 7.4 to 9.5 percent; specific surfaces were from 645 to 845 in^2/in^3; and void spacing factors were from 0.0034 to 0.0044 inch. A summary of the air-void data is given on the attached Table.

The air occurred as small, discrete, spherical voids characteristic of entrained air, and as coarser spherical and non-spherical voids characteristic of entrapped air. In the cores having the higher air contents, the entrained air-voids frequently occurred in small clusters in the mortar and in coarse aggregate sockets.

March 6, 1978

Erlin, Hime Associates, Inc.

By Bernard Erlin, President
Petrographer

Appendix J. Report of Erlin Hime Associates.

TABLE - Air-void data for the cores from the Western Butler Water Pollution Control Plant as submitted by West Penn Testing Laboratory

Core	Air (%)	Specific Surface (in^2/in^3)	Void Spacing Factor (in)*
7	7.8	845	0.0038
8	7.4	765	0.0044
10	8.8	810	0.0035
12	8.3	690	0.0044
13	9.5	645	0.0041
14	8.8	845	0.0034

* Calculated assuming a paste content of 25 percent

6.3